



DPX MARINE MONITOR

Real-time gas visibility for marine cargo spaces.

Multi-gas monitoring for oxygen depletion, toxic gas build-up, flammable vapours and cargo fumigant hazards.

Designed to support safe-entry decisions, inspection, unloading and confined-space risk management on vessels and terminal interfaces.



Multi-gas

O₂, LEL, CO, CO₂, H₂S and PH₃ options

30-90 days

Data logging for readings and events

>95 dB

Audible, visual and vibration alarms

PURPOSE

Marine gas monitoring for invisible atmospheric hazards.

The DPx Marine Monitor helps identify unhealthy airborne conditions before personnel enter, inspect or unload hazardous spaces.

Oxygen Depletion

Tracks oxygen reduction in holds and confined spaces where asphyxiation risk may develop without visible warning.

Toxic Gas Build-Up

Monitors selected toxic gases linked to cargo, combustion, decomposition, fumigation or vessel operations.

Flammable Vapours

Supports detection of combustible atmospheres using %LEL measurement configured for CH₄-equivalent response.

Fumigant Awareness

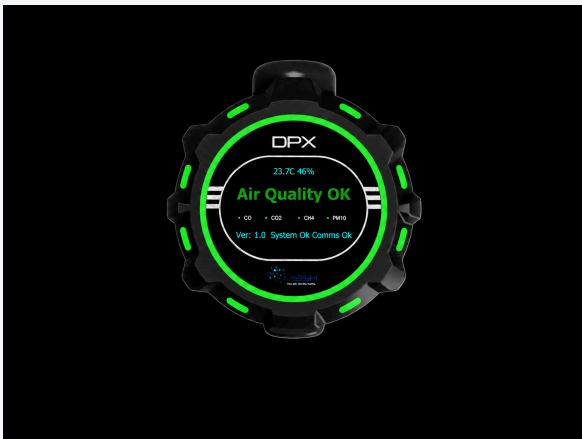
Optional phosphine sensing supports grain, wood pellet and fumigated cargo operations where PH₃ may be present.

Safe-Entry Support

Real-time readings, alarms and event logs support entry permits, inspection routines and unloading decisions.

Operational Integration

Optional streaming to HMI, tablet, ship network or terminal systems helps supervisors maintain visibility during work.



Portable marine monitor format for vessel and terminal workflows.

Applications

Coal carriers

Wood chip vessels

Wood pellet vessels

Grain vessels

Fumigated cargo

Barges

Coasters

Inland vessels

Terminal hoppers

Hatch supervision

Silo top-entry

Transfer points

Typical DPx Marine deployment areas for dry bulk cargo and confined-space monitoring.

Invisible hazards can develop quickly in cargo spaces.

Cargo holds and enclosed spaces may become unsafe because hazards are often invisible, odourless and difficult to judge without live readings.

Marine Atmosphere Risks

Gas measurement on marine vessels is crucial because cargo holds and confined spaces can develop oxygen depletion, toxic gases, flammable vapours and fumigants, including phosphine.

These hazards may be released from cargo such as coal, grain, wood pellets and phosphine-treated products. Real-time monitoring gives personnel earlier warning during entry, inspection and unloading.

Asphyxiation

Oxygen depletion can occur without smell, smoke or other visible warning signs.

Poisoning

Toxic gases and fumigants can expose personnel before symptoms are noticed.

Fire / Explosion

Flammable gases and vapours require early detection before ignition risk escalates.



Angled DPx Marine monitor view showing portable/wearable form factor.

Safe-entry decision support

The DPx Marine Monitor supports safe entry, inspection and unloading by providing live gas values, alarm status, event logging and optional data streaming to a local HMI, tablet or ship / terminal network.

Configurable warnings with logged evidence.

Alarm levels, event records and optional streaming help operators respond faster and document confined-space conditions.

Alarm 1 / Alarm 2

User-configurable thresholds for site requirements and cargo risk profile.

High-High PH₃

Optional phosphine high-high alarm for fumigated cargo operations.

Local Alerting

Audible >95 dB, visual and vibration alerts with distinct patterns.

Latching Events

Automatic latching alarms with acknowledgement and reset function.

Event Timestamps

All alarm occurrences logged with time reference for later review.

Entry Records

Time-entry records support confined-space protocols and operational evidence.

Data Logging And Connectivity

Function	Capability
Logging duration	Minimum 30-90 days
Download	USB / BLE / wireless platform
Streaming	Optional real-time streaming to HMI, tablet, ship or terminal network
Stored records	Gas readings, alarm events, environmental parameters and time-entry records

Key Advantages

Advantage	Operational Value
Marine-tuned	Configured for dry bulk cargo atmosphere risks.
Continuous readings	Real-time awareness as conditions change.
Mounting flexibility	Suspended hold-entry bracket and wearable options.
Service interval	12-month OEM service / calibration interval.
Best practice alignment	Supports IMO / IMSBC / SOLAS safe-entry practices.

Marine gas and environmental channels.

Standard environmental measurements are combined with configurable gas sensors for the cargo risk profile.

Standard Parameters

Parameter	Purpose
Temperature	Tracks ambient condition and operating context.
Humidity	Supports environmental awareness and sensor compensation context.
Barometric pressure	Supports marine atmosphere context and trend interpretation.
Methane (CH ₄)	Baseline methane / combustible gas context, configuration dependent.

Optional Gas Sensors - Select Up To 4

Gas	Marine Relevance
CO	Toxic gas linked to combustion and cargo-related risk.
CO ₂	Ventilation and enclosed-space atmosphere indicator.
%LEL	Combustible gas risk, CH ₄ -equivalent.
H ₂ S	Toxic gas risk in specific cargo and confined-space conditions.
O ₂	Oxygen depletion / enrichment monitoring.
PH ₃	Phosphine fumigant risk in treated cargo.
NO ₂	Nitrogen dioxide option for selected operations.

Measurement Specifications

Measurement	Range	Resolution / Accuracy
Temperature	-40 C to +125 C	Accuracy +/-0.2 C
Humidity	0-100% RH	Accuracy +/-1.8% RH
Barometric pressure	300-1200 hPa	Response time <60 s
CO	0-1000 ppm	1 ppm
CO ₂	0-50,000 ppm (0-5%)	1 ppm
O ₂	0-25% v/v	+/-0.1-0.2%
H ₂ S	0-100 ppm	1 ppm
PH ₃	0-20 ppm	0.1 ppm
%LEL	0-100% LEL	1% LEL

Configuration note

The DPx Marine platform can be configured for the vessel, cargo and operational risk profile. Final sensor fitment should be confirmed against the selected cargo hazards and site procedures.

Core specifications.

Product Specifications

Item	DPx Marine Multi-Gas Monitor
Primary indicators	O ₂ , %LEL, CO, CO ₂ , H ₂ S, PH ₃
Additional measurements	CH ₄ , NO ₂ , temperature, RH, pressure, dust concentration / dust index where configured
Ordering code	DPx MARINE
Warranty	1-year limited warranty
Service interval	12 months typical OEM service / calibration
Maintenance	No user-serviceable parts; wipe-down cleaning only

Mechanical Specifications

Item	Value
Enclosure	Reinforced corrosion-resistant thermoset material
Ingress protection	IP67
Weight	To be confirmed
Mounting	Shoulder / harness mounting and personal wearable mode
Drop resistance	1-1.5 m
Battery life	8 hours

Electrical And Communications

Area	Capability
Supply voltage	9-18 VDC or 9-48 VDC; option 115/240 VAC
Current consumption	120 mA typical; max 500 mA
Relays	Optional 2 x voltage-free relays; max 2 Arms / 250 Vrms / 100 VA
Standard comms	Modbus RTU over RS-485
Wireless	Optional site connectivity options, project dependent
Display	2.4 inch colour TFT
Audible alarm	95 dB audible alarm, configurable
PLC/SCADA	Real-time values, alarms, trending and reporting via Modbus to PLC/SCADA and dashboards

Environmental Specifications

Item	Value
Operating temperature	-20 C to +50 C
Operating humidity	0-100% RH; condensation-resistant sensor
Intended environments	Applicable IMO/SOLAS enclosed-space entry standards and IMSBC cargo-hold atmosphere guidelines
Docking station	Optional docking station for calibration, charging and bump-testing



DPx Marine Monitor

Real-time multi-gas monitoring for safer marine cargo holds, confined spaces, vessel inspection and terminal handling operations.

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